AMENDMENTS TO THE CLAIMS

1. (Currently Amended) In system for maintaining a plurality of assemblies including a plurality of replaceable components, the system having a computer with software for implementing a method of determining a time interval at which unscheduled demand for the components is expected to occur, the method comprising:

computing ~~establishing a set~~ a plurality of statistical models for a probability of unscheduled component demand as a function of time and a failure rate of a component, wherein each of the plurality of computed statistical models includes a distinct linear combination of variables pertaining to component use;

for each component, collecting historical unscheduled component demand data;

for each component, using the collected historical unscheduled component demand data to select one computed statistical model from the plurality of computed statistical models, wherein the selected computed statistical model most closely matches the historical unscheduled component demand data;

for each component, selecting an allowable probability of underestimating an average failure rate, α; and

using the selected computed statistical model to calculate a time interval at which the unscheduled component demand is expected to occur.

2. (Currently Amended) The method of claim 1, wherein using the selected computed statistical model comprises calculating a time interval when a probability of a next unscheduled component demand event equals the probability that the unscheduled component demand will not exceed the allowable probability $(1-\alpha)$.

3. (Currently Amended) The method of claim 1, wherein each computed statistical model comprises a Poisson distribution having a parameter λ.

4. (Currently Amended) The method of claim 3, wherein selecting [[the]] one computed statistical model comprises selecting an equation for λ.

5. (Currently Amended) The method of claim 1, further comprising eliminating insignificant variables and variables that cause multicollinearity from each of the computed statistical ~~established~~ models using the historical unscheduled component data.

6. (Canceled)

7. (Currently Amended) A computer software encoded with a program for forecasting unscheduled demand for a plurality of different components, the program when executed performing the steps of:

computing ~~establishing a set~~ a plurality of statistical models for modeling unscheduled demand for the components as a function of a failure rate of each of the components, wherein each of the plurality of computed statistical models includes a distinct linear combination of variables pertaining to component use;

for each component, collecting historical unscheduled component demand data;

for each component, selecting one of the computed statistical models of the plurality of computed statistical models for a probability of unscheduled component demand, wherein the selected computed statistical model most closely matches the historical unscheduled demand data corresponding to the component; and

for each component, determining a date at which a cumulative probability of unscheduled component demand reaches a predetermined threshold.

8. (Currently Amended) The program of claim 7, wherein each computed statistical model comprises an N-erlang distribution wherein the N-erlang distribution includes a parameter λ.

9. (Currently Amended) The program of claim 8, wherein the step of selecting one of the computed statistical models comprises selecting an equation for the parameter λ.

10. (Currently Amended) The program of claim 7, wherein each computed statistical model corresponds to a Poisson distribution, wherein the Poisson distribution has a parameter λ.

11. (Currently Amended) The program of claim 10, wherein the step of selecting one of the computed statistical models comprises selecting an equation for λ.

12. (Previously Presented) The method of claim 1, wherein the failure rate of the component is a function of temperature.

13. (Previously Presented) The method of claim 1, wherein the failure rate of the component is a function of hours of operation.

14. (Previously Presented) The method of claim 1, wherein the failure rate of the component is a function of flight cycles.

15. (Canceled)

16. (Canceled)